Sept - 1998.

The Meat Safety Enhancement Program

The Australian Quarantine and Inspection Service's Meat Inspection Reform Proposal

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Australia's Commitment to Food Safety

Australia maintains the highest standards in food safety. All tiers of government are committed to a policy of safe food production which is manifested in appropriate legislation, food handling practices and a low incidence of food contamination. Domestic consumers in Australia can confidently rely on the food production chain and appropriate response whenever there are breakdowns.

To further enhance this commitment the Prime Minister of Australia established a comprehensive Food Regulation Review in 1997. This review is examining ways to enhance the effectiveness and efficiency of food regulatory arrangements. Further to this review, the Australian Food Council has established a National Safe Food System in association with the Australia New Zealand Food Authority (ANZFA) to develop a coordinated, practical and effective food hygiene system centred on the Food Hygiene Standard and complementary AQIS regulations.

The union movement in Australia is firmly behind these initiatives. The Australian food industry has formalised an agreement with the Australian Council of Trade Union (ACTU) - the Australian peak union body, on ways to introduce HACCP to Australian food enterprises. Details of this agreement are provided at Attachment A.

In terms of meat production the Australian Government has established a partnership body, SAFEMEAT, representing the most senior officials/representatives of government and industry to ensure that red meat products achieve the highest standards of safety and hygiene from the farm to the consumer and to provide strategic direction and policy advice to the red meat industry. The terms of reference, modus operandi and membership of SAFEMEAT are provided at Attachment B.

It is in this context that Australia is moving to develop safer processes for meat production. Toward this end, this paper comprehensively describes AQIS's model for meat inspection reform, the Meat Safety Enhancement Program (MSEP).

The MSEP essentially involves demonstrating at a small number of export meat establishments the continuing improved performance of a HACCP-based regulatory inspection system which incorporates the use of AQIS-approved company sorters under fulltime AQIS inspection supervision and direct AQIS veterinary oversight and control. Australia's MSEP has been developed and refined in collaboration with the United States' Food Safety and Inspection Service (FSIS) to ensure its equivalence with the HACCP inspection models being concurrently implemented in the US.

The MSEP includes detailed macroscopic and microscopic monitoring of product hygiene and process monitoring through the Meat Hygiene Assessment (MHA) program. This program, which is conducted under the supervision of AQIS inspectors, ensures elimination of visual contamination with special emphasis given to pathology and zero tolerance defects on product.

A comprehensive level of additional Federal oversight and detailed audit and verification processes form an integral part of the MSEP. Every element of the system is subject to Federal Government legislation including a sanctions regime allowing recall of product and punitive measures. Independent AQIS Compliance Unit surveillance and provisions allowing for whistleblower protection also form part of the comprehensive package of controls.

Background to the MSEP

Australia is well advanced in the development and implementation of pathogen reduction and HACCP systems. The integrated HACCP-based regulatory inspection approach upon which the MSEP is based has been trialed and implemented in Australia's domestic sector since 1994. This system has progressively been adopted and now forms the basis of domestic meat inspection at all Australian domestic abattoirs.

Australia decided in 1995 to mandate the introduction of HACCP to the meat processing industry. To facilitate this process a joint government / industry project was conducted during 1996-1997 (Meat Industry Council Project 1) at 15 meat processing establishments (7 export, 8 domestic). Attachment C provides a summary of the project's activities and results which, notably, delivered measured improvements across the project participants after implementation of their HACCP systems.

Australia's Project 2 proposal, first formally presented to FSIS in 1996, was part of the evolutionary process of applying the principles of integrated HACCP-based regulatory inspection which worked so successfully in the domestic sector, to the export industry. The MSEP uses this underpinning but provides additional strengths and attributes to further enhance the integrity and scientific rigour of the model and its evaluation methodology.

Prerequisite Requirements for Inclusion in the MSEP

The plants participating in the MSEP are required to be recognised as being leaders in the Australian meat processing industry and to have a strong track record with regard to compliance with Australia's regulatory requirements (Export Meat Orders) and food safety standards. These prerequisites are consistent with the requirements imposed by FSIS for plants participating in the US HACCP inspection models which, like AQIS, places great importance on the requirement for trial establishments to have a strong record of ongoing compliance. The selection of plants is based on objective criteria to the extent where this is possible. Attachment D outlines the criteria on which participation in the MSEP is based. Stringent entry requirements ensure that only those plants that can sustain the required effort are selected.

Federal Oversight of the Program

Role of the AQIS Meat Inspection Staff

In the implementation phase of the MSEP, a slaughter floor AQIS meat inspector performing direct oversight and verification of the company sorting staff will be present on a full-time basis. This feature of retaining full-time Federal inspector presence on the slaughter floor to oversight company performance is consistent with the approach taken by FSIS in its inspection model. For the MSEP, essentially it means that slaughter floor operations and sorting will be directly oversighted by both an AQIS meat inspector and the AQIS Veterinary Officer In-Charge (VOIC). At medium and large plants where more than three sorting positions are required, the AQIS meat inspector will share slaughter floor oversight responsibilities along with the VOIC. At an average small plant with two or three sorting positions, the AQIS inspector will share the on-line sorting duties with the company sorters. In this way, he/she will have direct control over the performance of the company sorters in detecting visible defects. In the case of small plants, extensive direct Federal oversight and control relative to throughput will be provided by the full time presence of the AQIS VOIC. The role and responsibilities of the AQIS meat inspector are detailed in Attachment E.

Role of the AQIS VOIC

The VOIC will be in full-time attendance at the trial plants. He/she is responsible for all the sanitary and inspection standards including monitoring of establishment's ante-mortem program, micro and macro contamination levels at the plant, and final health certification of product. The duty statement and selection criteria for the VOIC is provided at Attachment F.

Other Federal Oversight

Other layers of Federal oversight and control in the MSEP at each trial establishment include:

- monthly (every 20/21 working days) AQIS Area Technical Manager (Veterinary Supervisor) visits and audits
  - objective recording of performance and compliance with regulatory requirements;
- two-monthly comprehensive multi-disciplinary audit team reviews;
- unannounced and announced AQIS Compliance Unit investigations and audits;
- comprehensive "before" and "after" objective assessments of operations and standards;
- oversight by Project Director and project coordinating staff; and
- oversight by overseas countries' regulatory authorities.

The external audits performed by the AQIS Area Technical Managers and members of the AQIS Compliance Unit are analogous to the roles of the FSIS District Managers and Compliance staff respectively in auditing the US establishments participating in FSIS's inspection pilots.

After a satisfactory trial period is undertaken and the results evaluated, a comprehensive level of Federal oversight will remain through the VOIC, Area Technical Manager audits and Compliance Officer visits.

Ante-mortem Oversight

The ante-mortem program at participating plant shall be based on HACCP principles and good manufacturing practices (GMP). It will be part of the establishments MSQA program and will be approved by the relevant ATM responsible for the establishment prior to the trial. It will be remain under the overall responsibility of the AQIS Veterinary (VO) and will be conducted in accordance with the provisions of the Export Control Act.

Procedures

- Establishments designated officers with Meat Inspection training will examine animals and segregate normal from abnormal animals;

- The AQIS VO will monitor to determine stock handlers effectiveness, examining as follows:
  - 100 animals at rest
  - 100 percent suspect/restricted slaughter category slaughter animals and document those animals on the AQIS suspect card;
  - 100 percent of the animals that require emergency slaughter;
  - 10 percent of normal animals in motion;
  - review establishment records eg. sale dockets, delivery weigh bills or delivery dockets to check for number of cattle arrive at the establishment, number detected sick by the designated establishment officer, number dead on arrival, number sorted as suspects/restricted slaughter by the the designated establishment officer, and will compare on a random basis details entered on the suspect card with those of the companies records.

Further during the trial, AQIS VO will also monitor 10 percent of the animals on the slaughter floor before commencement of dressing procedure to determine the effectiveness of the overall antemortem procedures.

Details of the Ante-mortem Program

The program must accurately describe the procedure and include the following details:

- a diagram showing the layout of the pens, including details such as construction, relationship to the slaughter floor and fixtures such as watering plants;

- procedures for handling, holding, feeding and watering of livestock with special emphasis on young stock (eg bobby calves);
- the method of performing ante-mortem inspection;
- a list of designated establishment officer (and their qualification) who will undertake the ante-mortem inspection;
- a flow chart and hazard analysis sheet of the company's ante-mortem procedures;
- details of how the company will perform internal audits their ante-mortem procedures;
- the method of handling animals that are unsuitable for slaughter, but which may be subject to some form of treatment for subsequent submission for slaughter, eg, soiled animals, fly struck sheep; animals suffering from metabolic diseases;
- the method used to segregate and identify animals that are suitable for slaughter (ie ante-mortem card);
- the method of providing written notification to the AQIS VO before slaughter, identifying which group of animals have been subject to ante-mortem inspection and are deemed fit for slaughter. The written notification should include:
  - number of animals inspected
  - the number of animals passed fit for slaughter
  - the number of animals deemed suspect
  - the number of animals rejected for treatment;
- the designated establishment officer will need to have suitable practical experience and training and be competent in the performance of this task;
- a company employee with a meat inspection certificate of competence shall have overseeing responsibility and shall monitor the operation at a minimum frequency of once weekly;
- when a designated establishment officer is not available, the ante-mortem inspection must be conducted by the AQIS VO;
- the program should describe how the company will ensure that State Legislative requirements will be met;
- the designated establishment officer on any day on which the slaughter is to take place at an abattoir shall
  - determine whether the animals have been adequately rested, and withhold from slaughter any animals requiring treatment;

- re-inspect animals following treatments;
- segregate suspects for disposition by the AQIS veterinary officer;

- Animals that are suffering (eg moribund or injured) must be brought to the attention of the AQIS VO for disposition as soon as possible. If the animals are detected outside normal; operating hours, they must be humanely destroyed and appropriately disposed of or they may be salvaged for as follows:

  - if the AQIS veterinary officer is available he may authorise slaughter of the animals with the carcase and offal retained for subsequent post-mortem inspection.

Inspector Performance Standards

A methodology has been developed for evaluating inspector effectiveness in the MSEP. Data will be collected initially in the "before" evaluation period (Phase 1) to determine the performance standards of government-employed inspectors. This process will be repeated in the "after" evaluation period (Phase 2) to generate data on the effectiveness of the company sorters in carrying out the duties previously performed by AQIS inspectors.

For the analysis, the lines of animals inspected will be classified by their broad type (for example, mutton, lambs, feedlot cattle, cattle) since there may be differences between these types. However, the plants participating in the MSEP predominantly concentrate on only one classification and type of animal. Separate statistics will be recorded for each type of product (for example, offal, heads, carcases).

The evaluation of inspector performance will involve a third party expert stationed down the line from each sorting station. The third party "evaluator" inspector will observe the inspection procedure, inspect the product after the regular inspector and record the number of errors made by the regular inspector. Types of inspection errors include wrong or incomplete inspection procedures, missed detections, and wrong detections and/or dispositions.

Data will be generated on individual inspector performance according to the following formula:

N Number of items inspected
X Number of errors made

P = X/N measures the proportion of errors made.

The analysis of variance statistical technique will be used to analyse the "before" (Phase 1) and "after" (Phase 2) values of **P** for the different lines of animals and types of product. The sampling summary for the evaluation of inspection performance is provided at Attachment G.

Sorting Function

Carcase and offal organoleptic sorting procedures will be performed in the MSEP by specifically qualified company-employed staff. As with the US HACCP inspection pilots, these company sorting staff will operate to precise instructions and guidelines detailed in their establishment's HACCP-based systems manual, which in the case of the MSEP, must be fully approved by AQIS. AQIS meat inspectors will be available for employment by the companies to perform this routine function. The role and responsibilities of the persons undertaking the sorting function are outlined in Attachment H.

The minimum qualification company staff must have to conduct organoleptic sorting in the MSEP is the Certificate III in Meat Inspection accreditation. This is also the minimum qualification for meat inspectors employed by AQIS. The Certificate III in meat inspection is a Federally-approved, national tertiary recognised course delivered by Technical and Further Education Colleges across Australia. The course is approved by the Australian Government National Training Authority, the Food Industry Advisory Board, the National Meat Industry Advisory Council and each of the individual State Training Authorities.

Each establishment will be required to maintain a significant pool of qualified sorters to support the functions to be performed by the companies. During the lead up to the implementation of the MSEP, 18 participants from the five trial meat processing establishments, additional to the existing complement of approximately 20 inspectors, undertook this course. All these participants will undertake refresher training prior to further implementation stages of the MSEP being reached. Subsequent to this training, each participant will undergo rigorous practical, on-the-job training under the guidance of an AQIS Training Services officer as well as ongoing supervision by the AQIS VOIC.

The trained staff will be integrated into the company's approved pool of accredited staff who would be available to carry out sorting tasks. In addition, AQIS inspectors and company sorters are required to participate in AQIS's ongoing training to maintain and update their skills. In this way, each establishment will have in its full-time employment an increased number of qualified staff to assist in and oversight the processing chain and maintain standards/competency in the long term.

An outline of the course is provided at Attachment I along with a progressive schedule of courses which have been provided to AQIS-employed meat inspectors to provide more enhanced skills and knowledge.

AQIS Meat Safety Monitoring Systems

The MSEP is underpinned by the following operating systems administered by AQIS that are in place at all Australian export-registered meat establishments:

The Meat Hygiene Assessment (MHA) Program

The MHA program monitors the performance standards of an establishment and is based on two key elements - the first relates to the physical condition of meat and the second to process controls in the production of the meat. Both systems utilise standardised methods to assure consistency in the outputs from monitoring and to provide an objective approach to assessing meat hygiene. The two systems complement each other and are designed to operate conjointly. Importantly, they play an integral part in the implementation of HACCP plans.

The product monitoring system assesses the level of macro-contamination on carcases, offal and cartoned meat. Statistically determined samples are routinely examined using a consistent methodology, including a defined classification for defects and their respective tolerances. At the normal level of sampling the sample size is determined to deliver a confidence level of 90%. The intensified sampling level which is applied as part of the corrective action for non-compliance, delivers a confidence level of 95%. Weightings are applied to defects according to their public risk and severity. This information is then condensed to a single value called a Defect Rating (DR).

The DR provides an overall picture of the hygienic condition of meat and confirms the adequacy of process controls associated with production. It represents the average total of a series of defect scores determined by the incidence of various forms of product contamination (for example, hair, hide, rail dust, smears, stains, pathology) detected on a statistically selected sample of carcases and offals.

Corrective action (reworking of product) on the entire production lot is specified when the DR fall below defined acceptable or marginal target values. These target values are constant across all species. Any zero tolerance defect detected in a sample (faeces, ingesta, milk or urine) automatically invokes corrective action on the entire production lot regardless of the DR. Only product rated as acceptable under the MHA program is certified for export from Australian registered meat establishments.

The process monitoring system assesses sanitary operations on the slaughter floor and offal room. It requires the routine examination of the procedures used at each process step in these two production areas. Weightings are applied when operations are found marginal or unacceptable. This information is then condensed to a single value called the Conformity Index.

Specific procedures at each process step are described in detailed work instructions. The work instructions include "best practice" techniques for tasks and sanitation. They also specify critical limits. These procedures collectively represent the preventive measures to minimise the risk from hazards, such as contamination, during processing. The process monitoring system measures compliance with procedures in work instructions against their critical limits.

Like product monitoring, corrective action is specified when the Conformity Index falls below acceptable or marginal target levels. The target levels are calculated as the average total of scores for all of the various operations on a slaughter floor or in offal production. In determining individual operation scores, tolerances are governed by the

level of risk to food safety (that is, high or low) inherent in the procedure. The program also applies trend analysis in the Defect Rating and Conformity Index to decision making in relation to adjusting process controls.

The MHA program has been operating at all Australian export meat establishments for more than 12 months and provides a national baseline for macro-contamination and process control under the existing system of regulatory inspection.

Attachment J outlines the measured performance at one of the trial plants. The data collected before the introduction of the plant's HACCP-based inspection program will be used as the performance baseline standard. The data collected post implementation will be used to quantitatively measure the change.

A comprehensive series of MHA training courses has been provided to industry and AQIS staff at all export registered abattoirs across Australia. The five day course included an introduction to quality assurance, an assessment of product and process monitoring, an overview of the National Plant Monitoring System and Scheme for Corrective Action, and the preparation and interpretation of charts for trend analysis.

Meat Safety Quality Assurance Program and HACCP

Meat Safety Quality Assurance (MSQA) is a meat safety monitoring system developed by AQIS. It is based on a modification of the ISO 9002:1994 standard and utilises the Codex Alimentarius Commission HACCP methodology to address process control. The MSQA program using HACCP is aimed to provide export meat establishments with a tool which will assist in the production of safe meat and meat products for human consumption.

The MSQA program aims at building effective foundations to support a meat safety system. This is achieved through first implementing a series of pre-requisite programs representing at least good manufacturing practice. This is followed by the application of the five preliminary steps and the seven principles of HACCP.

HACCP for the purposes of MSQA, has been restricted in its application to only those matters which clearly relate to food safety. Excessive numbers of critical control points lead only to unnecessarily complex monitoring systems which tend to offer less than optimal meat safety outcomes.

Application of this approach has resulted in an integrated system capable of delivering sound meat safety outcomes in a manageable framework.

Pre-requisite programs, in the form of Standard Operating Procedures (SOPs) are required to ensure the basic environment and operating conditions necessary for the production of safe, wholesome meat. They incorporate Good Manufacturing Practice and, wherever possible, Best Practice, within the framework.
As a minimum, under the MSQA program, SOPs must be developed and implemented for the following activities:

- Cleaning & Sanitation
- Personal Hygiene
- Waste Disposal
- Water Supply
- Pest & Vermin Control
- Chemicals including Additives

Additionally, SOPs for the following activities are required as they provide greater clarity of operation for what are very important aspects of ensuring safe meat production and ongoing system viability:

- Maintenance including Preventive Maintenance
- Livestock including Animal Care
- Slaughter
- Boning
- Product Traceability & Recall
- Management Review
- Internal Audit
- Training
- Calibration

As part of this process, it is also a requirement that specific instructions for each work station in the production process are prepared and implemented.

These work instructions should:

- describe the tasks to be performed;
- identify the order, if necessary, in which operations are to be performed;
- detail corrective action to be taken should errors occur;
- highlight the critical operations, if any; and
- be written in simple language familiar to the operator.

SOPs and work instructions need to be monitored to ensure their observance. This process must be documented and included in the company's internal audit program. The MHA program provides an objective approach to monitoring of SOPs and provides an avenue for ongoing trend analysis and improvement of the company's operations.

All AQIS Area Technical Managers and VOIC's at MSEP trial plants are trained in MSQA.

An AQIS-approved MSQA system is a mandatory requirement for the establishments participating in the MSEP. The HACCP component of the companies' MSQA systems is consistent with the company-developed HACCP programs that are mandatory for establishments participating in the US HACCP inspection pilots.

Microbiological Assessment

To validate its performance-based monitoring systems (MHA - process and product monitoring) which are integral to the integrated HACCP-based food safety monitoring program (MSQA), AQIS introduced the generic *E.coli* and Salmonella Monitoring program (ESAM) - a national program of microbiological monitoring of carcase surfaces. This program complements FSIS's Pathogen Reduction/HACCP program published in July 1996. Under the program carcase surfaces of all species of livestock slaughtered in Australia are tested for generic *E.coli* and Salmonella.

The testing schedule under this program is as follows:

- generic *E.coli* (beef @ 1/300 and sheep, lamb, and calves @ 1/1000)
  .. an average size plant will take 3-4 samples per shift

- Salmonella (beef @ 1/1000 and sheep, lamb and, calves @ 1/5000)
  .. an average size plant will test for one sample per shift.

This regime is similar to the microbiological data collection methodology proposed by FSIS in its HACCP inspection pilots.

As a further commitment to food safety, all slaughtering establishments participating in AQIS's MSEP will undertake additional testing of carcase surfaces for APC, generic *E. coli*, Salmonella and coliforms for each species to measure the current status and provide data collected during the "before" evaluation process. A summary of the "before" and "after" sampling and monitoring regime is provided at Attachment K. This sampling scheme has been designed to compare the quality of product before and after the implementation of a HACCP-based QA system. An estimate of the inherent variation between samples within a group is needed to assess if an adequate number of samples are being taken to be able to differentiate between an actual difference and one occurring purely by chance. Statistical advice from the Federal Bureau of Resource Sciences is that the sampling scheme indicates that the proposed number of samples in the trial would be adequate to detect any significant difference between the HACCP-based QA system and the traditional system of meat inspection.

All microbiological monitoring programs utilise performance trend analysis and refer to the comprehensive microbiological baseline established for cattle and sheep carcases in 1996 by the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

National Plant Monitoring System

The National Plant Monitoring System (NPMS) is a comprehensive monitoring and reporting system using checklists that record defects and lead to appropriate and timely corrective actions.

The basis of the NPMS is a set of forms that will enable AQIS VOICs to keep accurate records. These forms are to be used throughout the country and provide information in a standardised manner that will allow AQIS Area Technical Managers (ATMs) to monitor performance and standards.

Elements of NPMS

In designing the NPMS AQIS emphasised the following criteria:

- The VOIC is responsible for deciding how frequently to carry out checks, subject to review by the ATM. These checks should reflect standards achieved at the plant.
- While frequencies are flexible, VOICs need to draw a clear distinction between independent operational checks and system checks required by MHA/MSQA programs. Both are integral to the system.
- The VOIC resolves problems by using the weekly meeting with the company or where necessary by issuing a Corrective Action Request (CAR).
- The weekly meeting between company management and the VOIC is essential to ensure that the company carries out remedial action.
- The system is designed to run in parallel with the existing system for reviewing construction and equipment (Ex-32).
- Follow up action and acquittal of items must be carried out to the satisfaction of the VOIC and ultimately, the ATM.
- ATMs validate the VOIC's report as part of their review.

Operations recorded in the NPMS

- Check the checker,
  - Check the checker records exceptions to adequate performance of the company monitor, or of the company's MSQA/MHA system in the NPMS.
- Independent product examination (IPE),
  - Independent Product Examination (IPE) involving product or processes are conducted at whatever frequency is deemed fit by the VOIC. Records

of individual defects discovered during IPE are recorded in the NPMS Logbook.

- Modification to HACCP plans,
  - Weekly review of preventive measures and their critical limits.
- Weekly report on the results of the above activities,
  - This reports the NPMS weekly meeting between the VOIC and company managers.
- Adverse findings not acquitted from the previous weekly meeting become CARs.
- Construction and equipment reviews.
- Company notifications to correct defects depend upon the severity of the non-compliance,
  - minor defects are listed for initial discussion at the weekly meeting.
  - CARs are issued when nonconformities are identified in the company's program.

NPMS Form 6

The NPMS Form 6 provides the mechanism for reporting audit details.

- This applies to both the monthly audit by the supervising ATM and the full systems audit conducted on a 6 monthly basis.
- The Form 6 delivers an objective assessment of establishments.
- The Form 6 is designed for electronic capture to provide a National baseline.

The Scheme for Corrective Action (SCA) and Sustained Operational Compliance

The SCA was developed by AQIS to provide a transparent framework for promotion of continuing compliance with minimum standards prescribed in the EMOs and in overseas requirements. The Scheme incorporates elements of the NPMS and the MHA.

The scheme consists of a five tiered Early Warning System - a set of performance indicators that gives an establishment an indication of non-conformance and triggers a Cross Review (CR). The five elements of the early warning systems are:

1. The MHA program's outcomes ie conformance with the Product and Process Monitoring and results of the ESAM program;
2. NPMS which gives details about repeat or non-acquitted non-conformities;
3. Weekly meeting between company management and the VOIC;

4. Monthly meeting between company management and AQIS ATM; and
5. Quarterly report card to CEO of the company.

Performance indicators are used to trigger the start of the Scheme. Penalties are imposed where remedial measures have failed to consistently maintain compliance with regulatory standards. Penalties include cross reviews (involving more than one reviewer), delistment from selected markets and in extreme cases deregistration.

As with the HACCP inspection pilots being implemented by FSIS in the US, the MSEP is underpinned by stringent enforcement tools, with a comprehensive hierarchy of legislatively-backed enforcement powers integral to the program to ensure its integrity.

Uniformity of Slaughter Populations

Australia is fortunate to be free of all the major epidemic diseases of livestock (including OIE List A and the majority of the List B diseases) and is relatively free of other serious animal pests and diseases. Historically, this can be attributed to Australia's geographic isolation from other livestock-raising countries. In the early colonial period, the long sea voyage was itself an effective quarantine barrier. In more recent times, application of sound quarantine procedures has successfully prevented the entry of major diseases with imported livestock, genetic material and products.

Four abattoirs have been chosen to participate in the MSEP pilot study - two each of beef and sheep species. Neither of the beef abattoirs are in the dairy belt area of Australia. Both beef abattoirs primarily source their cattle from feedlots with one of the abattoirs having a 45,000 head feedlot on the site. Consequently, the cattle slaughtered at both plants are a homogenous group of young animals.

The animals slaughtered by the two sheep abattoirs in the pilot study are young, homogenous flocks of lamb and mutton from properties known to be free of flock diseases with zoonotic potential. Sourcing of such young stock is driven by the demand of the overseas market they supply including a dedicated lamb slaughter chain to supply the US markets.

AQIS Compliance Program Involvement

The MSEP is underpinned by AQIS's rigorous Compliance Program. Plants participating in the program must pass stringent entry requirements which include assessment under the "fit and proper person" scheme administered by the AQIS Compliance Unit. Additionally, Compliance Officers will conduct ongoing audits at trial establishments on both an announced and unannounced basis.

The integrity of the MSEP is further enhanced by the provision of the AQIS Compliance Program whistleblower hotline - *"AQIS REDLINE"*. Another Compliance activity relevant to the MSEP is the current refinement of its Meat Establishment Risk Assessment Model. More detailed information on this work, and the other components of AQIS's Compliance Program is provided at Attachment L, along with a brochure on

"AQIS REDLINE". AQIS's Compliance Program is independently oversighted by the Australian Commonwealth Law Enforcement Board.

Clean Animal Strategy

To produce and process microbiologically safe meat, it is important for a slaughtering establishment to receive clean and healthy livestock for slaughter. AQIS, through the provisions of the legislation (EMOs), restricts slaughter of cattle and sheep that are soiled or unclean, as well as daggy animals from feedlots as these pose a risk of contamination of meat. In addition to the requirements of the EMOs, the Australian red meat industry, under its 'Cattlecare' and 'Flockcare' programs, has undertaken the task of educating and increasing the awareness of livestock owners of the importance of clean livestock for slaughter in the delivery of safe products to meat consumers. Pamphlets which provide additional details on these clean animal initiatives are enclosed at Attachment M.

Conclusion

Australia is an important driving force internationally in developing modern meat inspection systems that address the inadequacies of traditional inspection arrangements. The MSEP is AQIS's centre-piece for meat inspection reform and is the vehicle that AQIS is using to further enhance the food safety standards of Australian meat. The MSEP is clearly a comprehensive program - a reflection of the extensive consultation and collaboration that has gone into its development and refinement. Importantly, the close and ongoing collaboration with FSIS officials has ensured that the final model is equivalent to the HACCP inspection models being developed and implemented concurrently in the US.

The Australian meat industry has already experienced significant success with an integrated regulatory HACCP-based inspection approach in its domestic meat processing sector. Should the MSEP - which provides additional strengths to further enhance the scientific rigour and integrity of this approach - deliver similarly successful outcomes, AQIS will actively promote the adoption by the entire Australian export meat processing industry of this comprehensive regulatory HACCP-based meat inspection system.

Attachment A

AUSTRALIAN FOOD COUNCIL

MEDIA RELEASE

27 August 1997 17:97

UNIONS & FOOD INDUSTRY REACH AGREEMENT ON FOOD SAFETY

The Australian Food Council and the ACTU today reached agreement on how to boost the use of the safest food production system in the world.

"The AFC and ACTU have agreed to support a national regulatory system that mandates food safety systems based on HACCP principles," said Mr Enzo Allara, Chairman, AFC, at the AFC's Annual General Meeting in Sydney today.

"Initially developed for astronauts in NASA's first space program, HACCP ensures safe food by preventing hazards at critical steps in food production.

Hazard Analysis Critical Control Point (HACCP) is an internationally recognised safe food production system used by an increasing number of Australian food manufacturers. It focuses on prevention rather than detection of food-borne illnesses and is based on hygiene and safety assurance systems.

"In working with unions, we can build on Australia's reputation for safe, high quality, clean food. We recognise the crucial role of skilled and trained workers in implementing food safety programs.

"Many of Australia's food manufacturers have already developed sophisticated food quality and safety assurance systems, but we need that to be universally adopted across our industry," said Mr Allara.

"Risk is part of our everyday lives, just as we face risk when we walk across a street there are inherent risks in producing and preparing food. Food is not a sterile product. In producing high quality food Australia's largest manufacturing sector aims to manage and mitigate risk.

"In today's modern society we face increasing challenges in providing safe food for an aging, more vulnerable population, with changing lifestyles and eating habits and new and virulent disease-causing organisms," said Mr Allara.

Working with unions to maximise the adoption of HACCP is proof of yet another step that the food industry is taking to ensure safe and high quality food for all Australians.

Further information:

Mitchell H Hooke, Executive Director, ph 02 6273 1466 (w), fax 02 6273 1477
Lina Melero, Public Affairs Director, ph 0412 697 368 (mobile)

JOINT STATEMENT BY THE AFC AND ACTU ON DEVELOPING AND IMPLEMENTING A NATIONAL FOOD HYGIENE STANDARD

Australia has an enviable reputation as a major producer and exporter of high quality processed foods and beverages, fresh produce, and raw agricultural commodities.

The Australian Food Council (AFC) and the Australian Council of Trade Unions (ACTU) are committed to the highest standards of food safety being applied across Australia's food and beverages industries.

Maintaining the hygienic integrity of Australia's food system requires a technical, regulatory and commercial response throughout the food production chain.

The AFC and the ACTU are committed to working co-operatively to ensure that the regulatory and commercial environment governing the production, preparation and sale of food is conducive to optimum hygiene.

The AFC and the ACTU recognise that the new safety assurance system will further enhance the provision of safe and high quality food for the consumer domestically and overseas, and build upon the excellent reputation of the Australian food industry.

The Technical Requirement

The AFC and the ACTU consider that food safety is best achieved through advanced hygiene and quality assurance systems applied to all food handling operations based on a preventive food hygiene system employing the internationally recognised Hazard Analysis Critical Control Point (HACCP) approach.

The fundamental prerequisites to the successful application of preventive HACCP-based systems by business are:

- management instruction in the principles of HACCP based systems, coupled with
- accredited work force education and training to provide for nationally uniform, key competencies in hygienic food handling.

The Regulatory Requirement

The AFC and the ACTU support the development of a regulatory system mandating food safety systems based on HACCP principles through the food chain from farm gate to retail, and across all sectors.

The regulations to address training and skill competencies relevant to:

- development, implementation and on-going operation of HACCP based food safety plans at the enterprise level; and
- certified auditing which will be performed by the three levels of Government or, on their behalf, by accredited, independent third parties.

Compliance with the regulations throughout the food production chain to be ensured through appropriate provisions in, and enforcement of, the legislation.

The Commercial Imperative

The AFC and the ACTU agree that food safety is a paramount and non-negotiable condition of doing business and protecting consumers.

The widespread adoption of HACCP based systems, by the processed foods and beverages industry will provide strong impetus - "pulling through" primary industries and "pushing into"

the retail sector - for the comprehensive, industry-wide implementation of preventive food safety systems.

Food safety assurance, effectively applied, is critical:

- to maintain confidence in Australia as a supplier of safe food;
- to boost competitiveness in overseas markets by ensuring regulatory equivalence with competitors and trading partners; and
- for vibrant, export-oriented food production industries employing a skilled, productive work force with accredited competencies.

AFC / ACTU Actions

The AFC and the ACTU will work together to:

- provide advice and expertise to Australia New Zealand Food Authority (ANZFA), the National Safe Food System (NSFS) Working Group and the Supermarket to Asia Council, to ensure the development of a co-ordinated practical and effective food hygiene system centred on the Food Hygiene Standard and complementary regulations;
- assist in the implementation of the Food Hygiene Standard through involvement in ANZFA/NSFS project working groups;
- liaise with other government and non- government agencies to provide impetus for the implementation of the Food Hygiene Standard through consulting extensively with, and seeking the advice of, all stakeholders including managers, farmers, unions and training providers;
- support and provide input to Industry Training Boards review of the level and appropriateness of current food hygiene skills and competencies with a view to revision in response to the changes anticipated with the implementation of the Food Hygiene Standard; and
- encourage a culture of shared responsibility for the safe production of food amongst all personnel in the food industry.

ENZO ALLARA
CHAIRMAN
AUSTRALIAN FOOD COUNCIL

BILL KELTY
SECRETARY
ACTU

Attachment B

SAFEMEAT

Terms of Reference

(a) To work with the objective of establishing world best practice in ensuring the safety of red meat products.

(b) To ensure each red meat industry sector implements sound management systems to ensure safe and hygienic product is delivered to the market place.

(c) To ensure adequate and nationally consistent Government standards and regulations relating to meat safety and hygiene.

(d) To ensure that effective crises management strategies are in place by the appropriate red meat industry sectors and to this end, ensure that there is a fully integrated and effective communications network.

Modus operandi

(a) Safemeat will operate as a partnership with each participant responsible for reporting to their respective sections and ensuring that outcomes required of them, are delivered.

(b) Safemeat partners will appoint Working Groups which will have direct responsibility for carrying out work required and delivering outcomes.

(c) Safemeat will meet at least four times a year.

(d) Safemeat will be chaired by a processor member of the partnership.

SAFEMEAT

Membership

- **The Secretary, Department of Primary Industries and Energy**: to represent the Commonwealth and facilitate management and implementation of Commonwealth responsibilities.

- **The CEO from a State Department of Agriculture/Primary Industries**: to represent the States/Territories and facilitate management and implementation of State/Territory responsibilities.

- **The Chairpersons/Presidents of each of the Cattle Council of Australia, Sheepmeats Council of Australia, Australian Lot Feeders' Association, the Australian Meat Council, the National Meat Association and the Australian Livestock Exporters' Council**: to be responsible for actions needed to ensure hygienic and safe product throughout each sector they represent.

- **The Commonwealth Chief Veterinary Officer**, who also is in charge of the Commonwealth Office of Food Safety: the CVO has direct links into the human health network and has a key responsibility for international market access negotiations and international organisations such as the World Organisation for Animal Health.

  The Chair of Meat and Livestock Australia Limited (MLA) will be a full participant in discussions and provide back-up support by way of research, analysis and advice and will ensure that services, which MLA may be asked to provide to underpin the operations of Safemeat, are delivered in an efficient and cost effective manner.

The Secretariat will be selected by competitive tender.

Other persons/entities may be called upon from time to time to have direct and full participation in Safemeat, depending on the issues involved. This applies particularly to the Commonwealth or State Chief Medical Officers.

Members may appoint alternate representatives but only on the basis that such persons are senior and able to take decisive action on behalf of the sector they represent.

Project 1: A project to support the introduction of HACCP based QA programs in the Australian red meat industry

CONCLUSIONS

This project was undertaken by the Meat Industry Council, with support from the Department of Industry, Science and Tourism Food Quality Program and the Meat Research Corporation Food Safety Key Program. The project has resulted in measured improvements in product hygiene levels, process, construction and equipment compliance, and HACCP system implementation across the meat processing plants which participated in the project.

In the course of the project, across the 15 participating plants:

- average slaughterfloor carcass AQLs improved 39, 14 and 35% respectively for pigs, sheep and cattle
- average chiller carcass AQLs improved 46, 53 and 51% respectively for pigs, sheep and cattle
- average procedural compliance scores rose from 7.6 to 8.2
- average construction and equipment compliance scores improved from 7.6 to 8.3
- average HACCP system implementation scores improved from 5.2 to 7.3, while the range of scores achieved (lowest to highest) reduced from 6.0 to 3.2
- ISO 9002 compliance was also evaluated. Average ISO 9002:1994 compliance rose from 5.4 to 7.3.

INTRODUCTION

This project was commenced in March 1996 and was completed at the end of August 1997. 15 plants from across Australia, both domestic and export, were selected for participation in the project. The distribution of the participants was:

State	Export	Domestic large	Domestic small	Total
Qld	1	2	0	3
NSW	4	0	1	5
Vic	1	1	1	3
SA	1	0	0	1
WA	1	0	1	2
Tas	0	1	0	1
NT	0	0	0	0
TOTAL	7	4	4	15

The results set out below are those recorded from the first and second audits of the plants in the project. Full details are set out in the final audit report furnished by Alliance Consulting and Management to the Meat Industry Council.

OBJECTIVES

The objectives of the project were to improve the safety of Australian meat by:

- assisting participating plants to implement HACCP based QA systems
- from this implementation experience, developing generic materials for use by industry in implementing HACCP based QA systems
- demonstrating improvements made by project participants
- communicating the results of the project to industry.

PROJECT ACTIVITIES

Project activities included:

- conducting a preliminary audit of each site
- conducting industry HACCP training courses
- conducting review workshops of plant level systems in conjunction with the State and Federal regulatory authorities
- conducting internal audit training with enterprises in the project
- researching and preparing generic best practice materials and HACCP audit guides for distribution to industry
- conducting a series of workshops with regulatory authorities to address the issues of consistency of standards, and the development of protocols for HACCP audit
- completing a final audit of participants to establish the improvements achieved during the project
- certifying HACCP programs by the regulatory authorities
- implementing a communications program to inform industry of project outcomes and to distribute project materials.

RESULTS

Improvements were achieved in products, processes and systems.

Significant product improvements were measured through lower slaughter floor and chiller carcass AQL scores, as shown overleaf (scores shown are average cumulative defect scores across samples of carcasses, the lower the score the better):

supported by:

Department of Industry Science and Tourism

Meat Research Corporation

Figure 1: while average slaughter floor AQL scores improved....:

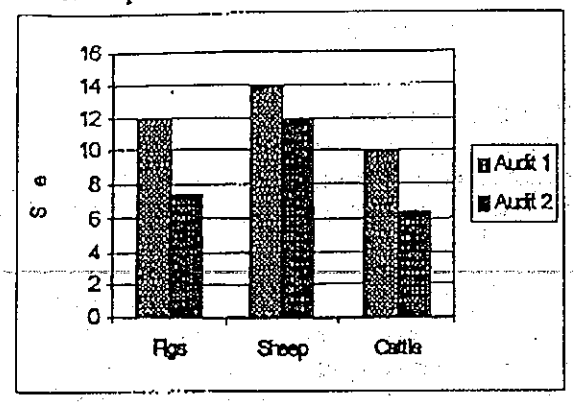
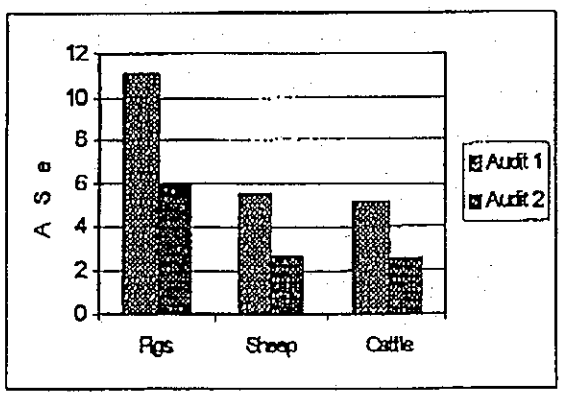


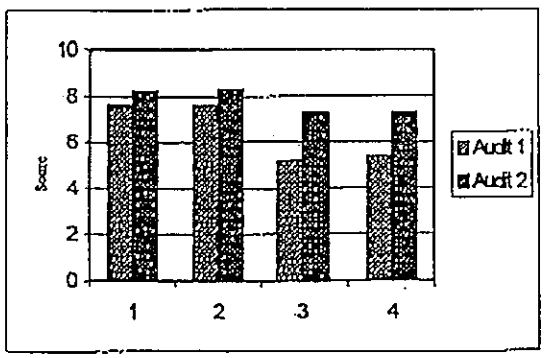
Figure 2: ....average chiller AQL scores improved more:



Slaughter floor AQL scores were measured prior to trimming and washing, while chiller AQL scores were measured following trimming and washing of carcasses.

Process control was evaluated through four broad areas: procedural compliance, construction and equipment compliance, HACCP program implementation and ISO 9002 compliance. Improvement was measured in all four areas.

Figure 3: Process Control improvement was achieved across the board:



Legend: 1: Procedures
2: Construction and Equipment
3: HACCP Programs
4: ISO 9002:1994 Compliance
Scores are a rating out of a possible 10.

Certification of systems by regulatory authorities was complete in the case of domestic plants at the conclusion of the project, with three export plant systems approved and four in the process of final audit at the conclusion of the project. One plant sought and achieved ISO 9002 certification of their QA system in the course of the project.

ISSUES FOR FUTURE DEVELOPMENT

The project has highlighted a number of issues for the industry to address as it continues the development and implementation of HACCP based QA systems. These issues include:

Systems development and implementation:

- time is required for enterprises to learn to use HACCP as a management tool; further product, process and system improvements can be expected as systems mature

Regulatory requirements:

- consistency of interpretation and application of standards will assist industry, as will consistent audit protocols and methodologies

Training:

- needs are apparent in skills development generally, and particularly in HACCP techniques, in root cause problem identification and problem solving, and in the application of statistical techniques

Outcomes:

- systems generally need to strengthen the internal management processes which lead to system improvement: internal audit and management review; systems need to move their focus away from regulatory requirements and more towards customer requirements.

A series of industry seminars was held in July/August 1997 to provide industry with information learned from the project. Some 400 industry personnel attended the seminars and received an information package which supplemented presentations given at the seminars.

REFERENCE

Audit of Final HACCP/QA Systems for the Meat Industry Council: Alliance Consulting and Management, Brisbane, May 1997.

supported by:

Department of Industry Science and Tourism

Meat Research Corporation

Attachment D

Requirements for Participation in the Meat Safety Enhancement Program

The criteria for plant participation in the MSEP are:

- the plant CEO and management volunteer to participate
- the ability to demonstrate compliance with importing country requirements (export registration, country specific listing)
- the CEO and management demonstrate a genuine commitment to the application of food safety principles, including
    - sound understanding of the application of HACCP systems
    - skilled/experienced staff to underpin the programs required
    - commitment to on-going staff training/development
    - sound relationship with AQIS staff to facilitate the transition to the new arrangements
- consistent compliance with Australian and overseas country food safety standards supported by objective data, including:
    - consistently low rejection rates to the US
    - regularly rated acceptable during overseas reviews (USDA, Canada, EU and other)
    - not having had their registration and/or specific country listing with AQIS suspended or cancelled in recent history
- management willing to share its experience and participate in industry seminars to promote the system.

Attachment E

Role of AQIS Meat Inspector in MSEP

The slaughter floor AQIS meat inspector will, along with the AQIS Veterinary Officer In Charge (VOIC), have a roving, verification role, with complete access to all carcases on each slaughter chain to directly observe, oversee, evaluate, verify, document and enforce the company's production system and process controls, which includes

- providing continuous regulatory presence over the entire production system including each on-line processing step and all aspects of the establishment which contribute to product safety;
- providing direct oversight verification and evaluation of the work of the company-employed sorters (government-approved, tertiary-qualified staff) who perform a routine, task-oriented sorting function:
  - observing and confirming carcases, parts or viscera rejected by the company and providing information to the AQIS VOIC as to which diseases or conditions are prevalent;
  - observing and confirming carcases, parts or viscera accepted by the company and verifying the removal of condemnable conditions;
  - inspecting and clearing product placed on the retain rail;
  - conducting a 'check the checker' monitoring of company sorting and hygiene assessment; and
  - giving independent advice and training to company sorters as required by AQIS Notices.
- provision for hands-on inspection of heads, carcases or viscera if and when necessary;
- liaising closely with the AQIS VOIC on overseeing the product and process monitoring performed by the company under the Meat Hygiene Assessment (MHA) system and the National Plant Monitoring System (NPMS);
- ensuring compliance with regulatory requirements is maintained;
- detecting and correcting any incidences of non-compliance with regulatory requirements;
- verification of the company's HACCP system
  - reviewing HACCP records to verify that the company is monitoring critical control points (CCPs) as set out in its HACCP plan, and otherwise executing its HACCP plan;

- independently monitoring CCPs

- verification of the company's microbiological, chemical and physical sampling procedures and analyses;

- ensuring that the AQIS required National Residue Survey program is operating satisfactorily;

- ensuring that the AQIS required Process Control and Pathogen Reduction microbiological sampling and monitoring programs are in place and operating satisfactorily;

- verifying that the establishment's Standard Operating Procedures are being followed and are effective;

- access to all product to ensure that product is not being misbranded or adulterated;

- liaising with the company QA manager to ensure all meat safety elements of production and process control for which the company is responsible are maintained;

- coordinating with the production supervisor who is responsible for implementing and maintaining company standards, to ensure these standards are being applied effectively; and

- checking that the company closes out Corrective Action Requests (CARs) and other corrective actions;

- alerting the AQIS VOIC to serious and critical system failures that require immediate regulatory action, including withdrawal of the official mark of inspection.

Attachment G

Evaluation of Inspection Performance - Sampling summary

Approximate chain speeds at trial establishments:

Goulburn	500 sheep per hour
Dubbo	500 sheep per hour
Wagga Wagga	70 cattle per hour
Rockdale	34 cattle per hour

One experienced 'evaluator' inspector will operate at each trial shed, for a period of 30 minutes at each inspection position, observing the inspection procedure, inspecting the product after the regular inspector and recording the number and type of errors made by the regular inspector.

Example: Rockdale - beef head inspection position

- Beef heads - 34 heads inspected per hour → 17 heads per 30 minute period
- 'Evaluator' observes head inspection procedure for two or three 30 minute periods per day
  i.e one hour of throughput per day → 34 heads inspected per day
- Over a four week (20 day) inspection evaluation period
  i.e. 20 x 34 heads → 680 heads inspected.

Therefore over a four week evaluation period the number of items inspected at each trial establishment is as follows:

Plant	Species	Heads	Carcases	Offal
Goulburn	Sheep	-	10,000	10,000
Dubbo	Sheep	-	10,000	10,000
Wagga Wagga	Beef	1,400	1,400	1,400
Rockdale	Beef	680 (1020)	680 (1020)	680 (1020)

Statistical advice from a Senior Australian Government that an error detection regime based upon the above tables will provide a statistically significant result regarding individual inspector effectiveness. Adequate defining confidence limits between the two phases are expected to be demonstrable by utilising the above methodology.

Attachment H

Sorting Function in the MSEP

All statutory and overseas country inspection requirements will continue to be performed by duly qualified and authorised meat inspectors. A comprehensive AQIS-approved HACCP-based regulatory inspection system covering all relevant aspects of the plant's operation, regulatory requirements and overseas country requirements will be developed and implemented at each participating plant. The sorters will be employed by the company but subject to the conditions and reporting arrangements etc. outlined in this paper. The HACCP-based regulatory system within which the sorters will operate will be subject to the regulations of the Export Control Act.

All sorters operating under the system must have the recognised Certificate in Meat Inspection and appropriate training in HACCP principles. Their duties and responsibilities will be clearly detailed in the plant's HACCP-based systems manual. All their sorting duties and work procedures must be in accordance with AQIS policies.

The system will be underpinned by a comprehensive program addressing recruitment, training, supervision, technical standards and internal and external evaluation. The system will be subject to regular in-house operational checks. It will also receive daily monitoring checks and audits undertaken by the AQIS VOIC. In addition AQIS will undertake regular comprehensive audits of inspection and operational systems and standards at the plant.

Under the HACCP-based regulatory system, sorting functions will become more closely integrated with production processes. In addition to but secondary to their sorting duties and where time permits company sorters will also perform other work, such as product preparation, corrective action, sampling, verification, industry training etc. The inspection, judgement and control duties of the sorters will take priority over any other allotted or expected duties of that official. Any instances in which a company sorter makes a claim, confirmed on investigation, that he/she has been hindered or coerced in the performance of his/her functions will be treated as a Critical Non-conformity.

The reporting lines of the company sorters will be clearly outlined in the company organisational chart and included in the plant quality system. For purposes of inspection, judgement and control, the sorters will work directly under the technical guidance and authorisation of the AQIS meat inspector and AQIS VOIC.

Attachment I

QUALIFICATIONS OF AUSTRALIAN MEAT INSPECTORS

There are three levels of formal qualifications for Australian Meat Inspectors:-

1. Certificate III in Meat Inspection
2. Advanced Certificate in Food Technology
3. Graduate Diploma in Applied Science (Food Technology)

1. Certificate III in Meat Inspection

The Certificate III in Meat Inspection is the minimum qualification a person must have to conduct meat inspection activities for the Australian Quarantine and Inspection Service (AQIS). It is also the required minimum qualification for the Australian Meat Safety Enhancement Program (MSEP).

Below is an outline of the course.

Course Outcomes

On completion of the course participants will have reached a standard of performance appropriate for entry into the workplace as a meat inspector.

Outline of Course Structure

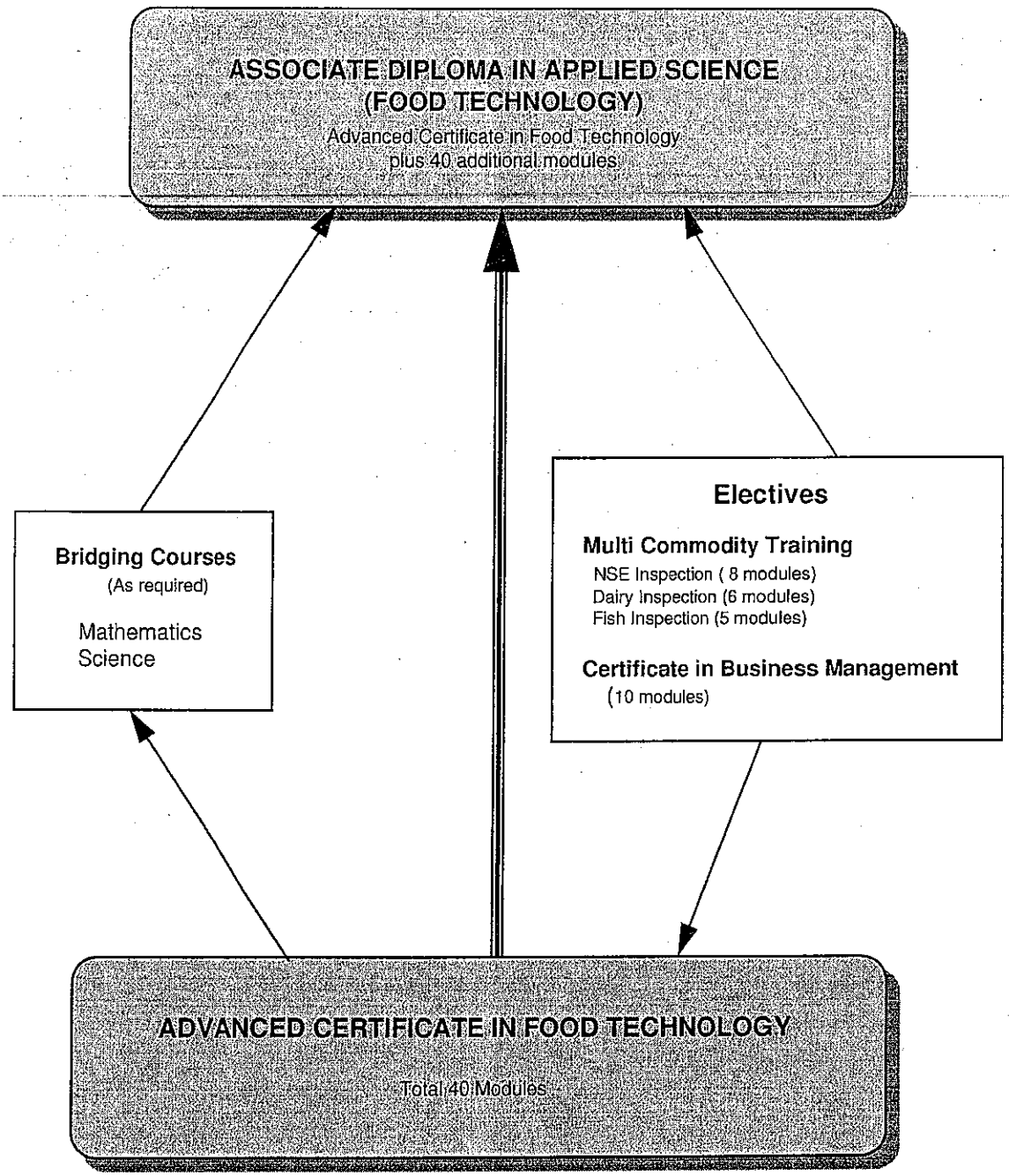
The course consists of 460 hours of study covering both on and off the aspects of training. The on the job component consists of training under the direct supervision of a qualified meat inspector.

Course Modules

Computer Operations - Fundamentals (5 hours)
Introduction to Food Technology (45 hours)
Meat Science (45 hours)
Quality Assurance A,B, and C (70 hours)
Meat Inspection Practice 1 and 2 (45 hours)
Meat Industry Observations 1 and 2 (100 hours)
Occupational Health and Safety - Meat Inspectors (10 hours)
Pathology and Abattoir Hygiene (45 hours)
Veterinary Public Health and Meat Inspection (45 hours)
Workplace Communication (40 hours)

TOTAL 460 hours

Below is an outline of the structure for the Associate Diploma in Applied Science (Food Technology) and the Advanced Certificate in Food Technology



FOOD TECHNOLOGY TRAINING PROGRAM STRUCTURE

2. Advanced Certificate in Food Technology

The Advanced Certificate in Food Technology consists of 40 modules- 33 core (or compulsory) modules and 7 electives. The core modules covering the 9 course units or topics are listed below. Of the 33 core modules, 26 modules are delivered by the colleges with the remaining 7 modules, 3 in Occupational Health and Safety and 4 in Quality Technology, delivered by accredited training staff from within AQIS. The structure of the Certificate course is detailed below.

Participants may choose up to 7 modules from the Multi Commodity Training courses and the Certificate in Business Management to make up the elective strand of the Certificate. These modules are delivered by either the colleges or AQIS training staff depending upon the specific unit. These courses are discussed in more detail below.

The length of the Certificate course is a total of 760 hours, 560 hours by correspondence and 200 hours residential. Subject to satisfactory progression participants should complete the Certificate in 18 months with articulation into the Diploma course if required.

Unit	Modules
Introduction to Food Technology	1-3
Food Technology 1	1-5
Food Technology 2	1-4
Packaging	1-2
Communications Skills	1-3
Food Science	1-6
Microbiology of Foods	1-3
Occupational Health and Safety	1-3
Quality Technology	1-4

As part of continuing education of all Food Standards Officers in AQIS approximately 95% have completed an Advanced Certificate in Food Technology.

3. Graduate Diploma in Applied Science (Food Technology)

The Graduate Diploma in Applied Science (Food Technology) consists of the Advanced Certificate plus 40 additional modules - 27 core (or compulsory) modules and 13 electives. The core modules covering the 9 course units are listed below.

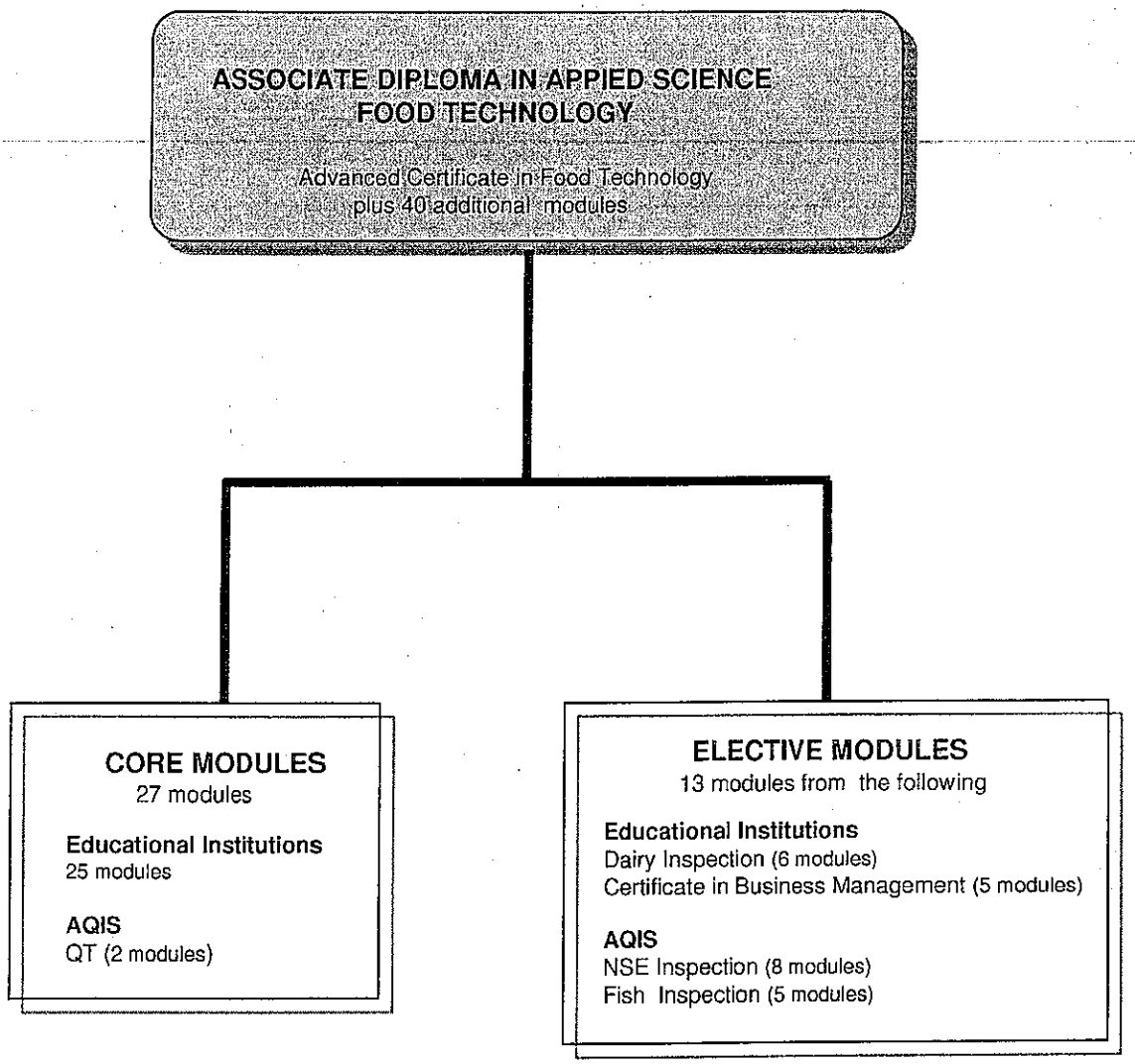
Similar to the Certificate course the elective modules for the Diploma course are chosen from the Multi Commodity Training course and the Certificate in Business Management.

The length of the Diploma course is a total of 1460 hours consisting of the 760 hours for the Certificate course, plus 540 hours by correspondence and 160 hours residential. Subject to satisfactory progression participants should complete the Diploma in 12 months.

The structure of the Associate Diploma :-

Topic	Modules
Communication Skills	4-6
Computer Skills	1-3
Process Engineering	1-4
Thermal Processing	1-3
Industrial Chemistry	1-4
Nutrition	1-2
Packaging	3-6
Food technology 2	7-9
Quality Technology	7-8

ASSOCIATE DIPLOMA IN APPLIED SCIENCE (FOOD TECHNOLOGY)



Electives

Multi Commodity Training

A number of commodity-specific inspection training courses have been developed in the areas of Non Slaughtering Establishments (NSE), Dairy Inspection and Fish Inspection by AQIS staff in consultation with the colleges and industry representatives to address specific training needs of the FSOs. The theory parts of these courses are offered as elective options for both the Certificate and Diploma courses by distance education. The practical part of this training is not required to complete either of the courses. However, before FSOs can commence inspection work in either of the dairy or fish areas they have to complete residential of 15 and 10 days respectively.

These modules are delivered by both the colleges and AQIS training staff depending upon the specific module. The Area Food Technology Training Co-ordinators are responsible for the distribution of material as well as assuming an ongoing co-ordination role between the course participant and the colleges. The modules offered in these courses are listed below.

Non Slaughtering Establishment
Legal Awareness
Security and Compliance
AUSMEAT
Trade Description
Documentation
Construction, Equipment and Refrigeration
NSE Procedures and Operations
Game Meat

NSE Modules

Dairy Inspection
Australian Dairy Industry Overview
Market Milk
Dairy Processing
Concentrate and Dried Milk Products
Cheese
Dairy Engineering

Dairy Inspection Modules

Fish Inspection
Australian Fishing Industry Overview
Fish Physiology
Fish Handling Techniques
Legal Awareness
Legislation and Documentation

Fish Inspection Modules

Approximately 15% of Food Standards officers have completed the Graduate Diploma in Applied Science (Food Technology).

Attachment J

Product Monitoring 'Before and After' Approval of HACCP Based MSQA Program

The chart titled "Objective Monitoring Results' illustrates the defect ratings recorded before and after implementation of the HACCP based MSQA program. The trend shows a marked improvement in the afterphase with a reduced baseline following implementation of the MSQA program.

Attachment K

MSEP - Sampling Summary

Objective Assessment of Product produced under Traditional (existing) arrangements of processing and inspection (Before)

Macroscopic Evaluation (Conformance Monitoring)

Carcases/Sides

Frequency: 10 Sample days over a 4-6 week period .

Product/Samples: Carcases/Sides - 100 samples (Randomly selected) per species per day.

Total: 1000 Sample sets per species per plant.

Offal

Frequency: 10 Sample Days (same days as above)

Product/Samples: Offal Sets - 200 samples (randomly selected - 20x10 different sets of offal)

Total: 2000 Sample sets per species per plant.

Estimating the Margin of Error with 95 percent confidence for a given percentage error in Macroscopic defects (Conformance Monitoring) by sample size

PREVALENCE	SAMPLE SIZE		
	1000	2000	3000
0.5	0.49	0.33	0.27
1.0	0.67	0.46	0.37
2.0	0.92	0.64	0.52
3.0	1.11	0.77	0.63
4.0	1.26	0.88	0.72
5.0	1.40	0.98	0.80

Microscopic Evaluation (Laboratory Analysis)

The purpose of the microbial testing during the trial at MESP participating establishments is to provide verification on the effectiveness of process control, pathogen reduction and on the performance based macroscopic monitoring systems.

This study will also validate that the meat inspectors performing the sorting function as part of an establishment's approved MSQA program under direct federal oversight are equally effective in detecting and eliminating macroscopic gross contamination thus delivering a consistently safe and wholesome product.

AQIS proposes a two level comparative microbiological study at MESP trial establishments:

- 60 samples (45 samples from carcases and 15 samples from offal) per species before and after the trial will be collected by incision method of sampling after chilling. Each sample will be tested for generic E.coli, Salmonella, coliform and APC. This level of testing will help to determine the number of each of the microbes before and after the implementation of the trial;

- 300 samples will be collected per species after chilling before and after the trial by the sponge method. Each sample will be tested for generic *E.coli*, Salmonella and APC. This testing schedule is aimed to determine equivalence to the current inspection system in the number of carcases found positive for a given microorganism. This sampling rate is similar to that outlined in the FSIS pilot study.

Estimating the Margin of Error with 95 percent confidence for a given percentage prevalence of positive microbial specimens by sample size

PREVALENCE	SAMPLE SIZE			
	100	**200**	**300**	**400**
1	2.45	1.63	1.29	1.10
2	3.24	2.19	1.75	1.50
5	4.77	3.27	2.63	2.26
10	6.38	4.41	3.56	3.06
15	7.50	5.20	4.21	3.62
20	8.34	5.79	4.69	4.04
25	8.99	6.25	5.07	4.37

Objective Assessment of Product produced under full HACCP Based Regulatory Inspection arrangements (After)

- identical sampling approach and numbers as taken for the Before situation.

Summary Table

Objective	Form of Evaluation	Item	Number of Samples
Before	Macroscopic	Carcases/Sides Offal	1000/species/plant 2000/species/plant
	Microscopic	Carcases/Sides Offal	45/species/plant (incision) 300/species/plant (sponge) 15/species/plant
After	*Macroscopic*	*Carcases/Sides* *Offal*	*1000/species/plant* *2000/species/plant*
	Microscopic	*Carcases/Sides* *Offal*	45/species/plant (incision) 300/species/plant (sponge) 15/species/plant

Attachment L

AQIS COMPLIANCE PROGRAM

Compliance, Legal and Evaluation Branch (CLEB) of AQIS has the following roles and responsibilities:

1. The development and maintenance of a quality driven compliance monitoring and investigation service to support the integrity of AQIS export inspection and quarantine security systems.
2. The development and maintenance of a sound legal basis for Government initiatives and AQIS program operations in the area of export inspection and quarantine surveillance.

The AQIS Compliance Program provides professional services that support and enhance AQIS goals through the management of information and the deterrence, detection and investigation of breaches against legislation administered by AQIS.

The Compliance Program seeks to protect the integrity of AQIS's export inspection and quarantine surveillance systems by delivering a quality investigation and monitoring program designed to encourage industry compliance with the legislative requirements for the movement of goods into or out of Australia.

The Compliance Program seeks to maximise voluntary compliance and to provide effective deterrence against non-compliance by deploying our resources to identify and to address integrity related problems in a systemic fashion.

The program utilises a team management approach to its work. Risk management and continuous improvement underpin the administrative and service delivery focus of the Compliance Program.

The Compliance Program delivers its outcomes through Canberra based and outposted officers stationed in Brisbane, Sydney, Melbourne, Adelaide and Perth.

The broad responsibilities of the AQIS Compliance Program relate to the enforcement of Commonwealth legislation. The vast majority of time is spent on the investigation of alleged or suspected breaches of legislation and related intelligence activities as well as "fit and proper person" reviews.

Areas of responsibility include: export meat; fish; fresh fruit and vegetables, grains, imported foods, animal and plant and human quarantine.

Within the Compliance Program there are four key areas of activity:

1. Investigations

We investigate specific allegations of industry malpractice and breaches of our quarantine legislation (post-barrier). Staff also carry out high profile pro-active tasks as

part of its 'deterrence' role. We use the Compliance Information System (CIS) to assist in our management of incidents.

2. "Fit and Proper Person" determinations

Two staff are engaged in the administration of the Departments "fit and proper person" provisions under the *Export Control Act 1982* and its subordinate legislation. These Officers also investigate and provide submissions to the Minister in relation to eligibility of persons seeking to be included on the list of authorised export meat processors for the US meat market.

3. Strategic Operations

Team members provide tactical support for Compliance investigations and pro-active operations as well as strategic support for the AQIS Executive. This is achieved by the production of accurate and timely intelligence reports, which are relevant to AQIS functions and corporate goals. These functions also include the collection, collation and analysis of intelligence reports and technical data including

- exchanging intelligence with other law enforcement agencies;
- advice to the AQIS Executive on the status of non-compliant activity in the various industries regulated by AQIS;
- briefing the Minister on malpractice issues; and
- developing risk profiles.

4. Tactical Operations

The conduct of specific investigations and pro-active projects. Applying the "fit and proper person" test to persons who are, or seek to be, occupiers of a registered establishment or exercise, or seek to exercise, positions of management or control at a registered establishment.

Compliance Officers conduct proactive audits f export establishments to deter unlawful activities and to encourage best practice with regard to transaction documentation.

These activities comprise of:

- formal unannounced assessments of the record keeping of export meat establishments, both on a broadly based and targeted regime
- informal (opportunity) calls on registered establishments to monitor activities.

Further, specific operations are planned and executed to address possible weaknesses in systems of regulation, involving:

compliance/integrity assessments of registered establishments to test if establishments are meeting their legislative obligations; and

tracking of product to understand corporate and commercial links between registered establishments dealing with high risk product (for example pet meat) and to ensure integrity of control systems (for example, Approved Quality Assurance (AQA) systems in Cold Stores).

LIAISON

Departmental

In accordance with the Departmental Management Protocols maintain close liaison with the Departmental Business, Ethics, Security and Investigations Unit (BESIU) and refer relevant matter relating to staff integrity to the Unit for appropriate action.

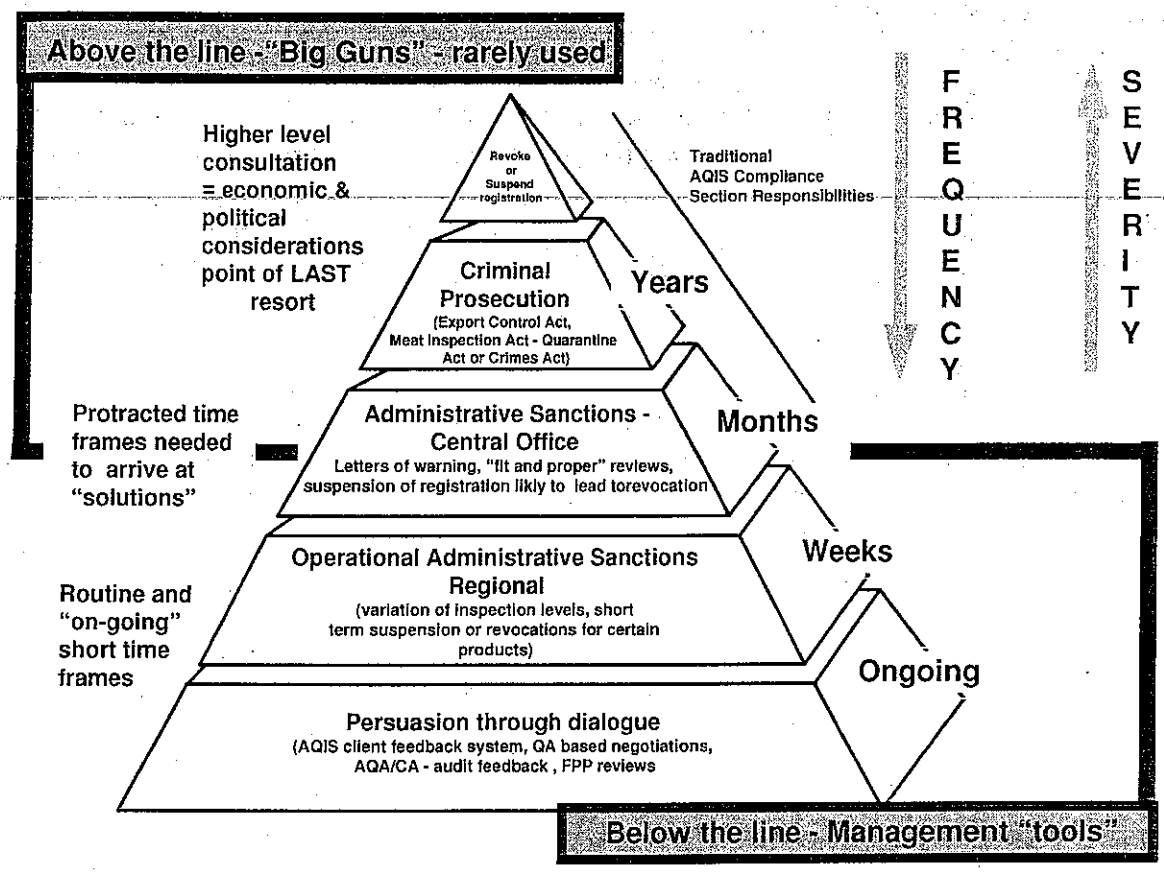
National

Maintain effective liaison with Commonwealth and State law enforcement bodies, with particular emphasis on the Commonwealth Law enforcement Board, Australian Bureau of Criminal Intelligence, Australian Federal Police, Australian Customs Service, Australian Securities Commission, Australian Nature Conservation Agency and the Director of Public Prosecutions and other relevant agencies.

International

Maintain effective liaison with the USDA - FSIS Compliance and the Office of Inspector General (Investigations), EU Customs Fraud Investigations, the New Zealand Ministry of Agriculture and Fisheries and other relevant agencies.

THE AQIS "REGULATORY PYRAMID" MODEL



Taking full account of all AQIS responsibilities - industry facilitation, client focus, responsiveness to government etc - AQIS has a principal role in regulating industry behavior and practices through legislation put in place by the Federal Parliament.

The Integrity Policy Section has developed a model, based on the work of Prof. Paul Braithwaite, Criminologist, Australian Institute of Criminology. The center piece of the model is that industry should be clearly aware that it is in the general interest of all industries falling under AQIS supervision to be compliant concerning legislative requirements.

Compliant behavior by industry is a major goal for AQIS. Therefore, AQIS must place its regulatory focus at the lower level of the pyramid, to achieve efficient and effective delivery of service. To achieve this it must be clear to industry that non-compliant behavior will result in escalation up the pyramid toward and including the ultimate sanctions of deregistration and/ or heavy fines and possibly goal sentences for individuals.

THE "FIT AND PROPER PERSON" SCHEME

On the recommendation of the Royal Commission into the Australian Meat Industry, fit and proper person legislation was first introduced as Order 47 in the *Prescribed Goods (General) Orders* (PG(G)Os), subordinate legislation to the *Export Control Act, 1982.*

The fit and proper person scheme is intended to be a protective mechanism for the integrity of the export industry, and not a further punishment for wrong doers. Despite this, its effect is to impose serious restrictions on the activities of individuals, which may be perceived as punishment.

People and/or companies to whom the legislation applies will fall into three broad categories. These are

- those who have been convicted of criminal offences;
- those who have failed to discharge financial obligations to the Department; and
- those who have clearly demonstrated an inability or unwillingness to comply with the operational requirements of the Act, regulations or orders.

This broad ranging power extends to the point of refusing to regard a person as 'fit and proper' because he/she is associated with another person who may be not fit and proper.

The potential harm which could be caused to Australia's export markets and the Australian industry as a whole, by people who fall within these categories varies and the Secretary may wish to give greater or lesser weight to matters falling into particular categories.

"WHISTLEBLOWER" HOTLINE PROJECT - THE *AQIS REDLINE*

An 'AQIS REDLINE' Project was commissioned by the Executive Director to implement a 'freecall' telephone reporting mechanism, serving as a national receiving point for reports from both employees and the general public of suspected incidents against AQIS legislation, incorporating reports of fraud and misconduct in AQIS programs and operations. The "AQIS REDLINE" was implemented on 2 December 1997.

The project review processes surveyed a number of "Hotlines" in use overseas and in Australia. As a result of this work the "AQIS REDLINE" was modelled on the service operated by the USDA Office of Inspector General.

The 'AQIS REDLINE' provides a conduit for persons to contact the AQIS Compliance program direct, guaranteeing anonymity, with information that may have not been otherwise provided.

COMPLIANCE RISK ASSESSMENT MODEL - EXPORT MEAT INDUSTRY

The Compliance Program is currently refining its export Meat Establishment Risk Assessment Model. This process compliments existing Compliance, Intelligence and other AQIS plant management schemes.

The Risk Assessment Model to be used by Compliance is based on an evaluation of each of the processes used in the production, transport and storage of export meat. From this analysis critical control points were identified, weighting was formulated and applied - taking into account the various combinations of controls and risks.

From this work an audit program has been developed. The audit, or data collection, process involves the use of a risk analysis check sheet, initially six establishments were selected for benchmarking. the risk analysis check sheets covered the areas of product, process, transport and on-plant security.

We are in the early stages of this process and as of February 1998, approximately 17 export meat establishments have been subject to data collection via on plant Compliance risk audits. 10 of these plants are listed to export product to the United States of America.

Each of the risk categories is broken down into specific sub-categories. For example the product category has sub categories of source, type of product, the ownership of the product the destination of the product and the security of the product requirements again, each of these processes are broken down into sub-elements. Risk analysis is carried out at this level, using HACCP principles. The results, or findings of an audit are then entered into an Excel spreadsheet to give an overall rating of the plant.

This assessment information will then be compared in the Canberra office against the Regional and National benchmarks. The results will be entered into the Compliance National Performance Database. Information in this data base will comprise information from a variety of sources, including Hotline reports (once operating in December 1997), management data, rejection rate data and plant monitoring data.

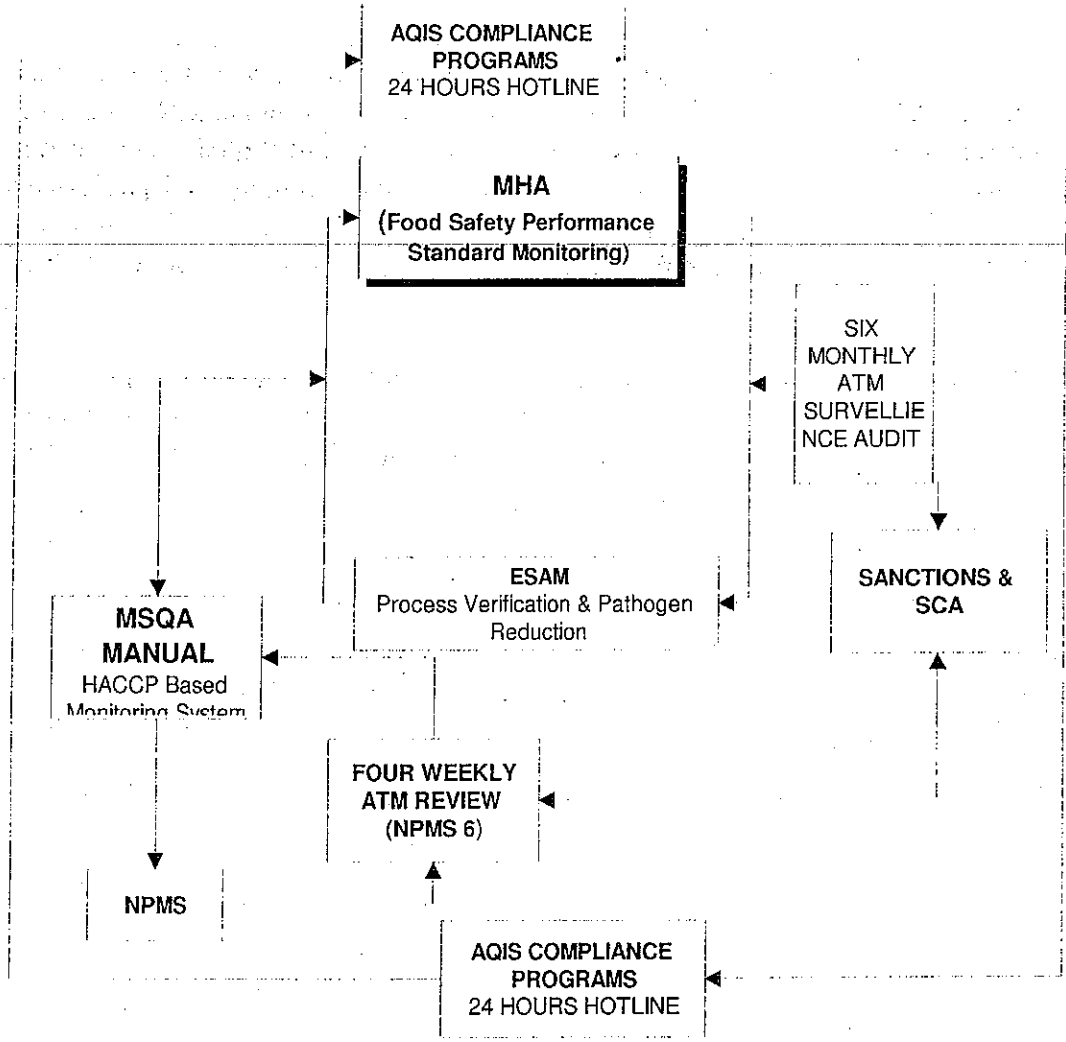
Output of this process is the ranking of establishments in order of risk, where the risk is perceived.

Actions open to the compliance program include advice to the plant or inspection staff to institute corrective action. The output will also be used to plan un-announced or out of hours compliance audits or pro-active visits, as well as setting a base for scheduling a priority for in hours compliance visits and future assessments.

CONCLUSION

The Compliance Program, through its integrated approach, delivers professional services addressing the integrity of AQIS's regulatory systems.

The independence and professionalism of the Compliance Program is enhanced by its commitment and obligation to meet the Commonwealth Law Enforcement Board's "best practice in fraud control" standards.


AQIS COMPLIANCE PROGRAMS
24 HOURS HOTLINE
MHA
(Food Safety Performance Standard Monitoring)
SIX MONTHLY ATM SURVELLIE NCE AUDIT
ESAM
Process Verification & Pathogen Reduction
SANCTIONS & SCA
MSQA MANUAL
HACCP Based
FOUR WEEKLY ATM REVIEW (NPMS 6)
NPMS
AQIS COMPLIANCE PROGRAMS
24 HOURS HOTLINE

Attachment M

Clean Animal advisory pamphlets.